

by projecting the object onto a corresponding one of planes positioned virtually surrounding the object;

generating a mesh model from said 3D region using a tree structure; and

producing said fully-textured 3D model from said mesh model with respect to said sequence of images.

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and
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Remarks

Claims 1-38 are pending. Claims 15-17 and 32-34 are allowed, Claims 4, 10, 21, 27, 37 and 38 are objected, and 1-3, 5-9, 11-14, 18-20, 22-26, 28-31, 35 and 36 are rejected.

In reference to the Examiner's comments in the revised Advisory Action dated 01/30/2002, the Applicants have amended Claims 1, 18 and 35 to further distinguish from the cited reference Dufour. Despite different views as to whether Dufour has taught or suggested the feature of generating mask images, the Applicants submit the added feature "each of said mask images derived from one of said sequence of images by projecting the object onto a corresponding one of planes positioned virtually surrounding the object" (*emphasis added*) is clearly neither taught nor suggested in Dufour, viewed alone or in combination with other cited reference.


To address the Examiner's concern about "the actual projecting step is not explained in the specification" in the Advisory Action, the Applicants wish to refer the Examiner to lines 18-22 of page 26 and Figure 6A in which image 606 is a mask image by projecting object 600 onto the plane.

With the added feature, the Applicants believe that Claims 1, 18 and 35 shall be allowable over the cited references. Accordingly, Claim 1-14, 18-31 and 36-38 shall be in condition for allowance. Therefore, it is believed that the entire application is now in condition for allowance, early and favorable action is being respectfully solicited.

If there are any issues remaining which the Examiner believes could be resolved through either a Supplementary Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at (408)777-8873.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to "Commissioner of Patents and Trademarks, Washington, DC 20231", on February 12, 2003

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Signature: 

Respectfully submitted;



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Clean Version of the Amendments

Please amend Claims 1, 18 and 35 as follows:

1. (*Twice amended*) A method for automatically generating a fully-textured 3D model of an object, said method comprising:

receiving from a camera a sequence of images taken sequentially and respectively around the object;

generating a 3D region from a sequence of mask images, each of said mask images derived from one of said sequence of images by projecting the object onto a corresponding one of planes positioned virtually surrounding the object;

generating a mesh model from said 3D region using a tree structure; and

producing said fully-textured 3D model from said mesh model with respect to said sequence of images.

18. (*Twice amended*) A computer readable medium for storing computer program instructions for automatically generating a fully-textured 3D model of an object, said computer readable medium comprising:

first program code for receiving from a camera a sequence of images taken sequentially and respectively around the object;

second program code for generating a 3D region from a sequence of mask images, each of said mask images derived from one of said sequence of images by projecting the object onto a corresponding one of planes positioned virtually surrounding the object;

third program code for generating a mesh model from said 3D region using a tree structure; and

fourth program code for producing said fully-textured 3D model from said mesh model with respect to said sequence of images.

35. (*Once amended*) A system for automatically generating a fully-textured 3D model of an object, said system comprising:

a turntable driven by a stepper motor to rotate said object placed thereon;
a camera positioned within a field of view of said camera viewing from an angle α looking down toward, and slightly oblique to said turntable;
a computing device including memory loaded with program code, said computing device coupled to and synchronizing said camera and said stepper motor, said computing device caused, when said program is executed therein, to perform operations of:

- receiving from said camera a sequence of images taken sequentially and respectively of said object when said object is being rotated by said stepper motor;
- generating a 3D region from a sequence of mask images, each of said mask images derived from one of said sequence of images by projecting the object onto a corresponding one of planes positioned virtually surrounding the object;
- generating a mesh model from said 3D region using a tree structure; and
- producing said fully-textured 3D model from said mesh model with respect to said sequence of images.